

Sedimentary Geology Prothero

Today, any kid can rattle off the names of dozens of dinosaurs. But it took centuries of scientific effort—and a lot of luck—to discover and establish the diversity of dinosaur species we now know. How did we learn that Triceratops had three horns? Why don't many paleontologists consider Brontosaurus a valid species? What convinced scientists that modern birds are relatives of ancient Velociraptor? In *The Story of the Dinosaurs in 25 Discoveries*, Donald R. Prothero tells the fascinating stories behind the most important fossil finds and the intrepid researchers who unearthed them. In twenty-five vivid vignettes, he weaves together dramatic tales of dinosaur discoveries with what modern science now knows about the species to which they belong. Prothero takes us from eighteenth-century sightings of colossal bones taken for biblical giants through recent discoveries of enormous predators even larger than Tyrannosaurus. He recounts the escapades of the larger-than-life personalities who made modern paleontology, including scientific rivalries like the nineteenth-century "Bone Wars." Prothero also details how to draw the boundaries between species and explores debates such as whether dinosaurs had feathers, explaining the findings that settled them or keep them going. Throughout, he offers a clear and rigorous look at what paleontologists consider sound interpretation of evidence. An essential read for any dinosaur lover, this book teaches us to see an ancient world ruled by giant majestic creatures anew.

A book for everyone fascinated by the huge beasts that once roamed the earth, *Rhinoceros Giants: The Paleobiology of the Indricotheres*, introduces a prime candidate for the largest land mammal that ever lived – the giant hornless rhinoceros, *Indricotherium*. These massive animals lived in Asia and Eurasia for more than 14 million years, about 37 to 23 million years ago. They had skulls 2 metres long, stood over 7 meters at the shoulder, and were nearly twice as heavy as the largest elephant ever recorded, tipping the scales at 20,000 kg. Fortunately, the big brutes were vegetarians, although they must have made predators think twice before trying to bring them down. In this book for lovers of ancient creatures great and small, Donald R. Prothero tells their story, from their discovery by palaeontologists just a century ago to the latest research on how they lived and died, with some interesting side trips along the way.

Nothing fills us with a sense of wonder like fossils. What looks at first like a simple rock is in fact a clue that reveals the staggering diversity of ancient environments, the winding pathways of evolution, and the majesty of a vanished earth. But as much as one might daydream of digging a hole in the backyard and finding a Tyrannosaurus, only a few places contain these buried treasures, and when a scientist comes across a remnant of prehistoric life, great care must be taken. What do budding paleontologists need to know before starting their search? In *Fantastic Fossils*, Donald R. Prothero offers an accessible, entertaining, and richly illustrated guide to the paleontologist's journey. He details the best places to look for fossils, the art of how to find them, and how to classify the major types. Prothero provides expert wisdom about typical fossils that an average person can hope to collect and how to hunt fossils responsibly and ethically. He also explores the lessons that both common and rarer discoveries offer about paleontology and its history, as well as what fossils can tell us about past climates and present climate change. Captivating illustrations by the paleoartist Mary Persis Williams bring to life hundreds of important specimens. Offering valuable lessons for armchair enthusiasts and paleontology students alike, *Fantastic Fossils* is an essential companion for all readers who have ever dreamed of going in search of traces of a lost world.

This fully revised and updated edition introduces the reader to sedimentology and stratigraphic principles, and provides tools for the interpretation of sediments and sedimentary rocks. The processes of formation, transport and deposition of sediment are considered and then applied to develop conceptual models for the full range of sedimentary environments, from deserts to deep seas and reefs to rivers. Different approaches to using stratigraphic principles to date and correlate strata are also considered, in order to provide a comprehensive introduction to all aspects of sedimentology and stratigraphy. The text and figures are designed to be accessible to anyone completely new to the subject, and all of the illustrative material is provided in an accompanying CD-ROM. High-resolution versions of these images can also be downloaded from the companion website for this book at: www.wiley.com/go/nicholssedimentology.

Sedimentology and Sedimentary Basins

An Introduction to Paleobiology

Vertebrate Evolution

The Evolving Earth

Amazing Fossils and the People Who Found Them

Studyguide for Sedimentary Geology

Every rock is a tangible trace of the earth's past. *The Story of the Earth in 25 Rocks* tells the fascinating stories behind the discoveries that shook the foundations of geology. In twenty-five chapters—each about a particular rock, outcrop, or geologic phenomenon—Donald R. Prothero recounts the scientific detective work that shaped our understanding of geology, from the unearthing of exemplary specimens to tectonic shifts in how we view the inner workings of our planet. Prothero follows in the footsteps of the scientists who asked—and answered—geology's biggest questions: How do we know how old the earth is? What happened to the supercontinent Pangea? How did ocean rocks end up at the top of Mount Everest? What can we learn about our planet from meteorites and moon rocks? He answers these questions through expertly chosen case studies, such as Pliny the Younger's firsthand account of the eruption of Vesuvius; the granite outcrops that led a Scottish scientist to theorize that the landscapes he witnessed were far older than Noah's Flood; the salt and gypsum deposits under the Mediterranean Sea that indicate that it was once a desert; and how trying to date the age of meteorites revealed the dangers of lead poisoning. Each of these breakthroughs filled in a piece of the greater puzzle that is the earth, with scientific discoveries dovetailing with each other to offer an increasingly coherent image of

the geologic past. Summarizing a wealth of information in an entertaining, approachable style, *The Story of the Earth in 25 Rocks* is essential reading for the armchair geologist, the rock hound, and all who are curious about the earth beneath their feet.

This new treatise is comprised of 24 papers covering virtually every recent development regarding fossil horses, rhinos, tapirs, and their extinct relatives. It includes materials currently available in no other reference, such as information on the oldest known rhino and the oldest known perissodactyl, as well as papers debunking myths about the evolution of horses, and strong evidence that hyraxes are not related to elephants. The summary chapter includes useful charts which show the relationships of all perissodactyl genera, their distribution in time and space, and a new classification of the order.

Written for a first course in sedimentary geology or sedimentary rocks and stratigraphy (with only an introductory geology/physical geology course as a prerequisite), Prothero and Schwab shows students how sedimentary strata serves geologists as a continuous record of Earth's history. The authors' conversational style, and focus on the important concepts make the book highly accessible to an undergraduate audience.

Encyclopedia of Geology, Second Edition presents in six volumes state-of-the-art reviews on the various aspects of geologic research, all of which have moved on considerably since the writing of the first edition. New areas of discussion include extinctions, origins of life, plate tectonics and its influence on faunal provinces, new types of mineral and hydrocarbon deposits, new methods of dating rocks, and geological processes. Users will find this to be a fundamental resource for teachers and students of geology, as well as researchers and non-geology professionals seeking up-to-date reviews of geologic research. Provides a comprehensive and accessible one-stop shop for information on the subject of geology, explaining methodologies and technical jargon used in the field Highlights connections between geology and other physical and biological sciences, tackling research problems that span multiple fields Fills a critical gap of information in a field that has seen significant progress in past years Presents an ideal reference for a wide range of scientists in earth and environmental areas of study

The Story of the Earth in 25 Rocks

Structural Geology of Rocks and Regions

Earth Materials

Field Excursions from the 2021 GSA Section Meetings

From Origins to Dinosaurs and Beyond

Origins of the Yeti, Nessie, and other Famous Cryptids

Never HIGHLIGHT a Book Again! Virtually all of the testable terms, concepts, persons, places, and events from the textbook are included. Cram101 Just the FACTS101 studyguides give all of the outlines, highlights, notes, and quizzes for your textbook with optional online comprehensive practice tests. Only Cram101 is Textbook Specific. Accompanys: 9780716739050 .

Advanced textbook outlining the physical, chemical, and biological properties of sedimentary rocks through petrographic microscopy, geochemical techniques, and field study.

Presents arguments for and against the existence of five notable cryptids and challenges the pseudoscience that furthers their legendary statuses, while providing an exploration of the nature and subculture of cryptozoology.

Prothero and Dott's classic Evolution of the Earth is a seminal work in the field. Changing curricula have created a need for a more accessible historical geology text that will assume no pre-requisites and be pitched appropriately to non-majors. The book is written in a lively and entertaining style similar to that employed by Dr. Prothero's many trade books. It will employ his trademark themes of evolution and "why and how we know what we know". In keeping with its more accessible approach the book will emphasize popular topics such as dinosaurs, mass extinctions, ice ages, climate change, and the origins of Earth and life.

Tectonic Evolution of Northwestern México and the Southwestern USA

Rhinoceros Giants

Greenhouse of the Dinosaurs

The Story of Evolution in 25 Discoveries

Tales of Important Geological Puzzles and the People Who Solved Them

A knowledge of structural geology is fundamental to understanding the processes by which the earth's crust has evolved. It is a subject of fundamental importance to students of geology, experienced field geologists and academic researchers as well as to petroleum and mining engineers. In contrast to many structural textbooks which dwell upon geometrical descriptions of geological structures, this book emphasises mechanical principles and the way in which they can be used to understand how and why a wide range of geological structures develop. Structures on all scales are considered but the emphasis of the book is on those that can be seen on the scale of hand specimen or outcrop. Drawing on their considerable teaching experience the authors present a coherent and lucid analysis of geological structures which will be welcomed by a wide variety of earth scientists.

The theory of evolution unites the past, present, and future of living things. It puts humanity 's place in the universe into necessary perspective. Despite a history of controversy, the evidence for evolution continues to accumulate as a result of many separate strands of amazing scientific sleuthing. In *The Story of Evolution in 25 Discoveries*, Donald R. Prothero explores the most fascinating breakthroughs in piecing together the evidence for evolution. In twenty-five vignettes, he recounts the dramatic stories of the people who made crucial discoveries, placing each moment in the context of what it represented for the progress of science. He tackles topics like what it means to see evolution in action and what the many transitional fossils show us about evolution, following figures from Darwin to lesser-known researchers as they unlock the mysteries of the fossil record, the earth, and the universe. The book also features the stories of animal species strange and familiar, including humans—and our ties to some of our closest relatives and more distant cousins. Prothero 's wide-ranging tales showcase awe-inspiring and bizarre aspects of nature and the powerful insights they give us into the way that life works. Brisk and entertaining while firmly grounded in fundamental science, *The Story of Evolution in 25 Discoveries* is a captivating read for anyone curious about the evidence for evolution and what it means for humanity.

A fascinating study of the thousands of new animal species that walked in the footsteps of the dinosaurs—and the climate changes that brought them forth. The fascinating

group of animals called dinosaurs became extinct some 65 million years ago (except for their feathered descendants). In their place evolved an enormous variety of land creatures, especially mammals, which in their way were every bit as remarkable as their Mesozoic cousins. The Age of Mammals, the Cenozoic Era, has never had its Jurassic Park, but it was an amazing time in earth's history, populated by a wonderful assortment of bizarre animals. The rapid evolution of thousands of species of mammals brought forth many incredible creatures including our own ancestors. Their story is part of a larger story of new life emerging from the greenhouse conditions of the Mesozoic, warming up dramatically about 55 million years ago, and then cooling rapidly so that 33 million years ago the glacial ice returned. The earth's vegetation went through equally dramatic changes, from tropical jungles in Montana and forests at the poles. Life in the sea underwent striking evolution reflecting global climate change, including the emergence of such creatures as giant sharks, seals, sea lions, dolphins, and whales. Engaging and insightful, *After the Dinosaurs* is a book for everyone who has an abiding fascination with the remarkable life of the past.

Never HIGHLIGHT a Book Again Virtually all testable terms, concepts, persons, places, and events are included. Cram101 Textbook Outlines gives all of the outlines, highlights, notes for your textbook with optional online practice tests. Only Cram101 Outlines are Textbook Specific. Cram101 is NOT the Textbook. Accompanys: 9780521673761

Giants of the Lost World

Dinosaurs and Other Extinct Monsters of South America

Petrology of Sedimentary Rocks

A Guide to Finding and Identifying Prehistoric Life

The Story of the Dinosaurs in 25 Discoveries

The Paleobiology of Indricotheres

This is an accessible introductory text which encompasses both sedimentary rocks and stratigraphy. The book utilizes current research in tectonics and sedimentation and focuses on crucial geological principles. It covers a wide range of topics, including trace fossils, mudrocks and diagenetic structures.

The first vertebrate animals appear in the fossil record over 520 million years ago. These lineages diversified and eventually crept ashore leading to further evolutionary divergence and the appearance of the familiar charismatic vertebrates of today. From the tiniest fishes, diminutive salamanders, and miniaturized lizards to gargantuan dinosaurs, enormous brontotheres, and immense whales, vertebrates have captured the imagination of the lay public as well as the most erudite academics. They are the among the best studied organisms. This book employs beautifully rendered illustrations of these diverse lineages along with informative text to document a rich evolutionary history. The prolific and best-selling author reveals much of the latest findings regarding the phylogenetic history of vertebrates without overwhelming the reader with pedantry and excessive jargon. Simultaneously, comprehensive and authoritative while being approachable and lucid, this book should appeal to both the scholar, the student, and the fossil enthusiast. Key Features Provides an up-to-date account of evolution of vertebrates Includes numerous beautiful color reconstructions of prehistoric vertebrates Describes extinct vertebrates and their evolutionary history Discusses and illustrates the first vertebrates, as well as familiar lineages of fishes, amphibians, reptiles, birds, and mammals Reviews mass extinctions and other important events in the diversification of vertebrates Related Titles Bard, J. *Evolution: The Origins and Mechanisms of Diversity* (ISBN 9780367357016) Bö hmer, C., et al. *Atlas of Terrestrial Mammal Limbs* (ISBN 9781138705906) Diogo, R., et al. *Muscles of Chordates: Development, Homologies, and Evolution* (ISBN 9781138571167) Schweitzer, M. H., et al. *Dinosaurs: How We Know What We Know* (ISBN 9780367563813)

Every fossil tells a story. Best-selling paleontology author Donald R. Prothero describes twenty-five famous, beautifully preserved fossils in a gripping scientific history of life on Earth. Recounting the adventures behind the discovery of these objects and fully interpreting their significance within the larger fossil record, Prothero creates a riveting history of life on our planet. The twenty-five fossils portrayed in this book catch animals in their evolutionary splendor as they transition from one kind of organism to another. We witness extinct plants and animals of microscopic and immense size and thrilling diversity. We learn about fantastic land and sea creatures that have no match in nature today. Along the way, we encounter such fascinating fossils as the earliest trilobite, *Olenellus*; the giant shark *Carcharocles*; the "fishibian" *Tiktaalik*; the "Frogamander" and the "Turtle on the Half-Shell"; enormous marine reptiles and the biggest dinosaurs known; the first bird, *Archaeopteryx*; the walking whale *Ambulocetus*; the gigantic hornless rhinoceros *Paraceratherium*, the largest land mammal that ever lived; and the *Australopithecus* nicknamed "Lucy," the oldest human skeleton. We meet the scientists and adventurers who pioneered paleontology and learn about the larger intellectual and social contexts in which their discoveries were made. Finally, we find out where to see these splendid fossils in the world's great museums. Ideal for all who love prehistoric landscapes and delight in the history of science, this book makes a treasured addition to any bookshelf, stoking curiosity in the evolution of life on Earth.

"The Evolving Earth' is a higher education geology textbook, aiming to teach evolution to non-majors. The book will emphasize popular topics such as dinosaurs, mass extinctions, ice ages, climate change, and the origins of Earth and life"--

Horns, Tusks, and Flippers

The Story of Life in 25 Fossils

Introduction to Mineralogy and Petrology

Abominable Science

What Darwin Got Wrong

Fantastic Fossils

Sedimentology is a core discipline of earth and environmental sciences. It enquires the origins, transport and deposition of mineral sediment on the Earth's surface. The subject is a link between positive effects arising from the building of relief by tectonics and the negative action of denudation in drainage catchments and tectonic subsidence in sedimentary basins. The author addresses the

principles of the subject, emphasising the advantages of a general science approach and the importance of understanding modern processes. Sedimentology and Sedimentary Basins is not an encyclopaedia, but attempts to stimulate interdisciplinary thought across the whole subject area and related disciplines. The book has been designed to meet the needs of earth and environmental science undergraduates.

Aliens. Ley lines. Water dowsing. Conspiracies and myths captivate imaginations and promise mystery and magic. Whether it's arguing about the moon landing hoax or a Frisbee-like Earth drifting through space, when held up to science and critical thinking, these ideas fall flat. In *Weird Earth: Debunking Strange Ideas About Our Planet*, Donald R. Prothero demystifies these conspiracies and offers answers to some of humanity's most outlandish questions. Applying his extensive scientific knowledge, Prothero corrects misinformation that con artists and quacks use to hoodwink others about geology—hollow earth, expanding earth, and bizarre earthquakes—and mystical and paranormal happenings—healing crystals, alien landings, and the gates of hell. By deconstructing wild claims such as prophecies of imminent natural disasters, Prothero provides a way for everyone to recognize dubious assertions. Prothero answers these claims with facts, offering historical and scientific context in a light-hearted manner that is accessible to everyone, no matter their background. With a careful layering of evidence in geology, archaeology, and biblical and historical records, Prothero's *Weird Earth* examines each conspiracy and myth and leaves no question unanswered.

Jerry Fodor and Massimo Piatelli-Palmarini, a distinguished philosopher and scientist working in tandem, reveal major flaws at the heart of Darwinian evolutionary theory. They do not deny Darwin's status as an outstanding scientist but question the inferences he drew from his observations. Combining the results of cutting-edge work in experimental biology with crystal-clear philosophical argument they mount a devastating critique of the central tenets of Darwin's account of the origin of species. The logic underlying natural selection is the survival of the fittest under changing environmental pressure. This logic, they argue, is mistaken. They back up the claim with evidence of what actually happens in nature. This is a rare achievement - the short book that is likely to make a great deal of difference to a very large subject. *What Darwin Got Wrong* will be controversial. The authors' arguments will reverberate through the scientific world. At the very least they will transform the debate about evolution.

More than a hundred years ago, Sir Arthur Conan Doyle wrote a novel called *The Lost World* with the exciting premise that dinosaurs and other prehistoric beasts still ruled in South America. Little did Conan Doyle know, there were terrifying monsters in South America--they just happened to be extinct. In fact, South America has an incredible history as a land where many strange creatures evolved and died out. In his book *Giants of the Lost World: Dinosaurs and Other Extinct Monsters of South America*, Donald R. Prothero uncovers the real science and history behind this fascinating story. The largest animal ever discovered was the huge sauropod dinosaur *Argentinosaurus*, which was about 130 feet long and weighed up to 100 tons. The carnivorous predator *Giganotosaurus* weighed in at more than 8 tons and measured more than 47 feet long, dwarfing the *T. rex* in comparison. Gigantic anacondas broke reptile records; possums evolved into huge saber-toothed predators; and ground sloths grew larger than elephants in this strange, unknown land. Prothero presents the scientific details about each of these prehistoric beasts, provides a picture of the ancient landscapes they once roamed, and includes the stories of the individuals who first discovered their fossils for a captivating account of a lost world that is stranger than fiction.

The Evidence and the People Who Found It

Analysis of Geological Structures

After the Dinosaurs

Debunking Strange Ideas about Our Planet

Sedimentary Geology (Loose Leaf)

Encyclopedia of Geology

One of the leading textbooks in its field, *Bringing Fossils to Life* applies paleobiological principles to the fossil record while detailing the evolutionary history of major plant and animal phyla. It incorporates current research from biology, ecology, and population genetics, bridging the gap between purely theoretical paleobiological textbooks and those that describe only invertebrate paleobiology and that emphasize cataloguing live organisms instead of dead objects. For this third edition Donald R. Prothero has revised the art and research throughout, expanding the coverage of invertebrates and adding a

discussion of new methodologies and a chapter on the origin and early evolution of life.

This textbook provides a basic understanding of the formative processes of igneous and metamorphic rock through quantitative applications of simple physical and chemical principles. The book encourages a deeper comprehension of the subject by explaining the petrologic principles rather than simply presenting the student with petrologic facts and terminology. Assuming knowledge of only introductory college-level courses in physics, chemistry, and calculus, it lucidly outlines mathematical derivations fully and at an elementary level, and is ideal for intermediate and advanced courses in igneous and metamorphic petrology. The end-of-chapter quantitative problem sets facilitate student learning by working through simple applications. They also introduce several widely-used thermodynamic software programs for calculating igneous and metamorphic phase equilibria and image analysis software. With over 350 illustrations, this revised edition contains valuable new material on the structure of the Earth's mantle and core, the properties and behaviour of magmas, recent results from satellite imaging, and more.

Since the extinction of the dinosaurs, hoofed mammals have been the planet's dominant herbivores. Native to all continents except Australia and Antarctica, recent paleontological and biological discoveries have deepened understanding of their evolution. This text reveals their evolutionary history.

Relates the physical and geometric elegance of geologic structures within the Earth's crust and the ways in which these structures reflect the nature and origin of crystal deformation through time. The main thrust is on applications in regional tectonics, exploration geology, active tectonics and geohydrology. Techniques, experiments, and calculations are described in detail, with the purpose of offering active participation and discovery through laboratory and field work.

Principles of Igneous and Metamorphic Petrology

The Evolution of Hoofed Mammals

Sedimentary Geology

Principles of Stratigraphy

An Introduction to Sedimentary Rocks and Stratigraphy by Prothero, Donald R.

California's Amazing Geology

The ultimate illustrated guide to the lost world of prehistoric mammals After the mass extinction of the dinosaurs 65 million years ago, mammals became the dominant terrestrial life form on our planet. Roaming the earth were spectacular beasts such as saber-toothed cats, giant mastodons, immense ground sloths, and gigantic giraffe-like rhinoceroses. Here is the ultimate illustrated field guide to the lost world of these weird and wonderful prehistoric creatures. A woolly mammoth probably won't come thundering through your vegetable garden any time soon. But if one did, this would be the book to keep on your windowsill next to the binoculars. It covers all the main groups of fossil mammals, discussing taxonomy and evolutionary history, and providing concise accounts of the better-known genera and species as well as an up-to-date family tree for each group. No other book presents such a wealth of new information about these animals—what they looked like, how they behaved, and how they were interrelated. In addition, this unique guide is stunningly illustrated throughout with full-color reconstructions of these beasts—many never before depicted—along with photographs of amazing fossils from around the world. Provides an up-to-date guidebook to hundreds of extinct species, from saber-toothed cats to giant mammoths Features a wealth of color illustrations, including new reconstructions of many animals never before depicted Demonstrates evolution in action—such as how whales evolved from hoofed mammals and how giraffes evolved from creatures with short necks Explains how mass extinctions and climate change affected mammals, including why some mammals grew so huge

Principles of Stratigraphy reaffirms the vital importance of stratigraphy to the earth sciences, and introduces the undergraduate to its key elements in a lively and interesting fashion.

First recent text devoted to stratigraphic principles and applications. Contains details of the latest stratigraphic techniques. Includes numerous case studies and real-world examples.

An Instructor manual CD-ROM for this title is available. Please contact our Higher Education team at HigherEducation@wiley.com for more information.

Donald R. Prothero's science books combine leading research with first-person narratives of discovery, injecting warmth and familiarity into a profession that has much to offer nonspecialists. Bringing his trademark style and wit to an increasingly relevant subject of concern, Prothero links the climate changes that have occurred over the past 200 million years to their effects on plants and animals. In particular, he contrasts the extinctions that ended the Cretaceous period, which wiped out the dinosaurs, with those of the later Eocene and Oligocene epochs. Prothero begins with the "greenhouse of the dinosaurs," the global-warming episode that dominated the Age of Dinosaurs and the early Age of Mammals. He describes the remarkable creatures that once populated the earth and draws on his experiences collecting fossils in the Big Badlands of South Dakota to sketch their world. Prothero then discusses the growth of the first Antarctic glaciers, which marked the Eocene-Oligocene transition, and shares his own anecdotes of excavations and controversies among colleagues that have shaped our understanding of the contemporary and prehistoric world. The volume concludes with observations about Nisqually Glacier and other locations that show how global warming is happening much quicker than previously predicted, irrevocably changing the balance of the earth's thermostat. Engaging scientists and general readers alike, **Greenhouse of the Dinosaurs** connects events across thousands of millennia to make clear the human threat to natural climate change.

Key concepts in mineralogy and petrology are explained alongside beautiful full-color illustrations, in this concisely written textbook.

Outlines and Highlights for Sedimentary Geology

Evolution, Extinction, and the Future of Our Planet

The Catastrophic Explosion of the Toba Volcano

Evolution of the Earth

When Humans Nearly Vanished

The Evolution of Perissodactyls

California has some of the most distinctive and unique geology in the United States. It is the only state with all three types of plate boundaries, an extraordinary history of earthquakes and volcanoes, and it has many rocks and minerals found nowhere else. The Golden State includes both the highest and lowest point in the continental US and practically every conceivable geological feature known. This book discusses not only the important geologic features of each region in California, but also the complex geologic four-dimensional puzzle of how California was assembled, beginning over 2 billion years ago. The author provides up-to-date and authoritative review of the geology and geomorphology of each geologic province, as well as recent revelations of tectonic history of California's past. There are separate chapters on some of California's distinctive geologic resources, including gold, oil, water, coastlines, and fossils. An introductory section describes basic rock and mineral types and fundamental aspects of plate tectonics, so that students and other readers can make sense of the bizarre, wild, and crazy jigsaw puzzle that is California's geological history.

The fascinating true story of the explosion of the Mount Toba supervolcano--the Earth's largest eruption in the past 28 million years--and its lasting impact on Earth and human evolution. Some 73,000 years ago, the huge dome of Mount Toba, in today's Sumatra, Indonesia, began to rumble. A deep vibration shook the entire island. Jets of steam and ash emanated from the summit, followed by an explosion louder than any sound heard by Homo sapiens since our species evolved on Earth. The eruption of the Toba supervolcano released the energy of a million tons of explosives; seven hundred cubic miles of magma spewed outward in an explosion forty times larger than the largest hydrogen bomb and more than a thousand times as powerful as the Krakatau eruption in 1883. So much ash and debris was injected into the stratosphere that it partially blocked the sun's radiation and caused global temperatures to drop by five to nine degrees. It took a full decade for Earth to recover to its pre-eruption temperatures. When *Humans Nearly Vanished* presents the controversial argument that the Toba catastrophe nearly wiped out the human race, leaving only about a thousand to ten thousand breeding pairs of humans worldwide. Human genes today show evidence of a "genetic bottleneck," an effect seen when a population of organisms becomes so small that their genetic diversity is greatly reduced. This group of survivors could be the ancestors of all humans alive today. Donald R. Prothero explores the geological and biological evidence supporting the Toba bottleneck theory; reveals how the explosion itself was discovered; and offers insight into how the world changed afterward and what might happen if such an eruption occurred today. Prothero's riveting account of this calamitous supervolcanic explosion is not to be missed.

This book is an illustrative introduction to metamorphic rocks as seen in the field, designed for advanced high school to graduate-level earth science and geology students to jump-start their observational skills. In addition to photographs of rocks in the field, there are numerous line diagrams and examples of metamorphic features shown in thin se

Donald R. Prothero's *Evolution* is an entertaining and rigorous history of the transitional forms and series found in the fossil record. Its engaging narrative of scientific discovery and well-grounded analysis has led to the book's widespread adoption in courses that teach the nature and value of fossil evidence for evolution. *Evolution* tackles systematics and cladistics, rock dating, neo-Darwinism, and macroevolution. It includes extensive coverage of the primordial soup, invertebrate transitions, the development of the backbone, the reign of the dinosaurs, and the transformation from early hominid to modern human. The book also details the many alleged "missing links" in the fossil record, including some of the most recent discoveries that flesh out the fossil timeline and the evolutionary process. In this second edition, Prothero describes new transitional fossils from various periods, vividly depicting such bizarre creatures as the *Odontochelys*, or the "turtle on the half shell"; fossil snakes with legs; and the "Frogamander," a new example of amphibian transition. Prothero's discussion of intelligent design arguments includes more historical examples and careful examination of the "experiments" and observations that are exploited by creationists seeking to undermine sound science education. With new perspectives, Prothero reframes creationism as a case study in denialism and pseudoscience rather than a field with its own intellectual dynamism. The first edition was hailed as an exemplary exploration of the fossil evidence for evolution, and this second edition will be welcome in the libraries of scholars, teachers, and general readers who stand up for sound science in this post-truth era.

Evolution

The Age of Mammals

An Introduction to Sedimentary Rocks and Stratigraphy by Donald R. Prothero, Fred Schwab, ISBN

From Turbulence to Tectonics

A Pictorial Guide to Metamorphic Rocks in the Field

Tales of Intrepid Fossil Hunters and the Wonders of Evolution

Sedimentary Geology Macmillan Higher Education

The Princeton Field Guide to Prehistoric Mammals

Sedimentology and Stratigraphy

Bringing Fossils to Life

Weird Earth

What the Fossils Say and Why It Matters